

REMARKS

Due to the numerous grammatical and idiomatic errors contained in the originally filed abstract and specification, Applicant is enclosing herewith a substitute abstract and specification including "clean" and "marked-up" copies. The undersigned hereby certifies, to the best of his knowledge and belief, that the enclosed substitute abstract and specification do not contain any new matter.

In response to the Examiner's rejection of Claims 1-4 under 35 USC 112, second paragraph, and to more particularly point out and distinctly claim the subject matter which Applicant regards as the invention, Claims 1-4 have been canceled and replaced by newly presented Claims 5-14. It is respectfully submitted that the currently presented claims are cured of all formal defects and are patentably distinguishable over the prior art cited by the Examiner. No new matter has been added.

Claim 1 has been rejected under 35 USC 102(b) as anticipated by JP '974. Claim 1 also has been rejected under 35 USC 102(a) as being anticipated by JP '478. Claims 3 and 4 have been rejected under 35 USC 103(a) as being unpatentable over JP '478. Applicant respectfully traverses these grounds of rejection and urges reconsideration in light of the following comments.

The presently claimed invention is directed to a method of treating oils and fats to form a product oil suitable for use as a fuel. The method comprises the steps of providing an oil and/or fat, introducing the oil and/or fat into a treatment vessel, adding moisture to the oil and/or fat and conducting a heat treatment of the oil and/or fat at a pressure less than 10 atmospheres to obtain a pre-hydrolyzed oil and/or fat and carrying out an ozone treatment and a light irradiation treatment on the pre-hydrolyzed oil and/or fat and forming the product oil.

As discussed in the present specification, the present invention can treat various oils and fats having a high saturated fatty acid content and waste oils or fats and discharged oils or fats can be processed to yield a product oil which can be used as a fuel or in various other utilities. The present invention allows for a wider variety of oils and/or fats to be processed and refined to produce a product oil. It is respectfully submitted that the prior art cited by the Examiner does not disclose the presently claimed invention.

JP '974 discloses a method of producing a fuel which generates a reduced amount of air pollutants and involves the step of subjecting a hydrocarbon oil containing an olefin component to a catalytic reaction with ozone and mixing the product with water. This reference discloses the introduction of ozone into the hydrocarbon oil containing the olefin component and irradiating the mixture with ultraviolet rays. Afterwards, water is injected into the mixture and the mixture agitated to emulsify the ozonized hydrocarbon oil and water.

The presently claimed invention is patentably distinguishable over JP '974 in that the present invention requires the addition of moisture to an oil and/or fat and then the conducting of a heat treatment of the oil and/or fat at a pressure less than 10 atmospheres to obtain a prehydrolyzed oil and/or fat. This is not shown in JP '974. As shown in Table 1 of the present specification, the product fuel obtained by the method of the present invention has superior properties as compared with one obtained by a methyl esterification method or light oil on the market.

In contrast to the present invention, JP '974 uses ultraviolet light to irradiate a hydrocarbon oil containing olefin components and a catalytic reaction occurs with ozone to convert the mixture into an emulsion by mixing it with water and producing an emulsion fuel. As such, the presently claimed invention is completely different from that of JP '974 which is concerned with producing an emulsion fuel which has a

reduced generation of air pollutants while the present invention produces an oil suitable for use as a fuel from waste oils and fats.

JP '478 has a publication date of August 26, 2004. The priority date of the present application is December 25, 2003 and a verified English translation of the foreign priority document will be filed in order to perfect Applicant's foreign priority date. As such, this reference is not available as a reference against the present application. Moreover, like the previously discussed reference, this reference also does not show adding moisture to an oil and/or fat and conducting a heat treatment of the oil and/or fat at a pressure less than 10 atmospheres to obtain a pre-hydrolyzed oil and/or fat. Therefore, for the reasons discussed above, it is respectfully submitted that the presently claimed invention is patentably distinguishable over this reference also. JP '478 carries out ozone treatment of fuel under ultraviolet light irradiation for removing inorganic components contained in the fuel. As such, this reference is concerned with the reforming of fuel. The purpose of this reference is to decompose fatty acids contained in vegetable oil by oxidation by contacting the vegetable oil with ozone under ultraviolet light irradiation. In contrast thereto, the present invention can treat waste oils and fats from animals and is clearly distinguishable over this reference.

Reconsideration of the present application and the passing of it to issue is respectfully solicited.

Respectfully submitted,

  
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